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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/851,465	05/05/1997	EDGAR C. ROBINSON	INT21246	5986

7590 07/23/2010  
JOHN RUSSELL UREN  
STE 202  
1590 BELLEVUE AVE  
WEST VANCOUVER, V7V1A7  
CANADA

EXAMINER
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SUERETH, SARAH ELIZABETH

ART UNIT	PAPER NUMBER
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3749

MAIL DATE	DELIVERY MODE
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07/23/2010

PAPER

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* EDGAR C. ROBINSON and LEONARD FLEMING

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Appeal 2009-003767  
Application 08/851,465  
Technology Center 3700

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Before JENNIFER D. BAHR, MICHAEL W. O'NEILL, and  
FRED A. SILVERBERG, *Administrative Patent Judges*.

O'NEILL, *Administrative Patent Judge*.

DECISION ON APPEAL<sup>1</sup>

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<sup>1</sup> The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, or for filing a request for rehearing, as recited in 37 C.F.R. § 41.52, begins to run from the “MAIL DATE” (paper delivery mode) or the “NOTIFICATION DATE” (electronic delivery mode) shown on the PTOL-90A cover letter attached to this decision.

## STATEMENT OF THE CASE

Edgar C. Robinson and Leonard Fleming (Appellants) seek our review under 35 U.S.C. § 134 of the final rejection of claims 1-8. We have jurisdiction under 35 U.S.C. § 6(b).

### *The Invention*

The claimed invention is to an infrared burner assembly. Such assemblies are utilized in water heaters, as part of a shelter heater, military field kitchen, and the like.

Claim 1, reproduced below, is the sole independent claim on appeal and is representative of the subject matter on appeal.

1. An infrared burner assembly comprising a burner tube, an air aspirated nozzle, a compressor to provide air under pressure to said air aspirated nozzle, a fuel supply to supply liquid fuel at ambient pressure to said air aspirated nozzle, said liquid fuel being introduced to said air aspirated nozzle in liquid form, a metering valve interposed between said liquid fuel supply and said air aspirated nozzle, said metering valve being adjustable during operation of said burner assembly to increase or decrease the liquid fuel supplied to said air aspirated nozzle from said liquid fuel supply, said fuel and said air being mixed within said air aspirated nozzle and being combusted within said burner tube, said burner tube having a perforated outer surface immediately adjacent to and downstream from said air aspirated nozzle.

### *The Prior Art*

The Examiner relies upon the following as evidence of unpatentability:

Patrick	US 3,245,458	Apr. 12, 1966
Reichhelm	US 3,361,183	Jan. 2, 1968
Nutten	US 3,428,406	Feb. 18, 1969
Bennett	US 4,061,463	Dec. 6, 1977

### *The Rejections*

The following Examiner's rejections are before us for review:

Claims 1, 2, and 4-8 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Nutten in view of Patrick and Bennett.

The Examiner's findings and analysis of the scope and content of Nutten, Patrick, and Bennett; the differences between the claimed invention and Nutten; and why a person of skill in the art would modify Nutten with the teachings of Patrick and Bennett and thus render the claimed invention as obvious, are found on pages 3-7 of the Answer.

Claim 3 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Nutten in view of Patrick and Bennett as applied to claim 2 above, and further in view of Reichhelm.

The Examiner's findings and analysis of the scope and content of Nutten, Patrick, Bennett, and Reichhelm; the differences between the claimed invention and Nutten, Patrick, and Bennett; and why a person of skill in the art would modify the combination of Nutten, Patrick, and Bennett with the teachings of Reichhelm and thus render the claimed invention as obvious, are found on pages 8-10 of the Answer.

### *Contentions*

For the rejection of claims 1, 2, and 4-8, Appellants' submit that Nutten does not teach or suggest an infrared burner where the liquid fuel is drawn into the combustion chamber through an air aspirated nozzle such that air creates the suction to draw in the liquid fuel. *See* Br. 4. Appellants' contend that Patrick does not teach an infrared burner of the type taught by the present invention. *Id.* Instead, Patrick teaches an infrared burner where the gas is supplied under pressure through an orifice into a venturi tube

throat. *Id.* Based on this understanding of Patrick, Appellants contend that in Patrick's first embodiment, as shown in Figure 6, gas and not liquid is drawn into the combustion chamber and thus this teaching does not assist in reaching the claimed limitation of a fuel supply to supply liquid fuel to an air aspirated nozzle. *See* Br. 4-5.

Appellants acknowledge that Patrick's second embodiment is a liquid fuel burner, yet differs substantially from the infrared burner of the present invention because Patrick teaches delivering liquid fuel under pressure at the atomizing nozzle. *See* Br. 5. Appellants contend that Patrick's second embodiment "is diagrammatically opposite to the teachings of the present application where fuel is received at the nozzle under ambient pressure and compressed air draws fuel into the nozzle." *Id.* Appellants contend that Bennett does not cure the deficiencies of Nutten and Patrick concerning the claimed aspect of an infrared burner that combusts an atomized fuel introduced to the nozzle at ambient pressure and drawn into the nozzle and the combustion chamber by air under pressure. *See* Br. 5-6. Appellants contend that the Examiner erred by not showing that Nutten, Patrick, and Bennett define an operable combination similar to the present invention. *See* Br. 6. According to Appellants, no such operable arrangement is feasible with Nutten, Patrick, and Bennett. *Id.*

Appellants further contend that, while it is permissible for the Examiner to pick one or two claimed elements from a plurality of references and based on those findings conclude the claimed invention is obvious, the references themselves must, individually or collectively, teach or suggest the claimed combination; and that does not exist in the present combination of Nutten, Patrick, and Bennett. *See* Br. 6.

For the rejection of claim 3, Appellants contend that Reichhelm does not cure the argued deficiencies within Nutten, Patrick, and Bennett. *See Br. 7*. Further, Appellants contend that “the addition of Reichhelm would not teach an operable infrared burner assembly as defined by the present claims.” *Id.*

Appellants argue the rejection of claims 1, 2, and 4-8 as a group. Accordingly, we select claim 1 as the representative claim of the group and claims 2 and 4-8 stand or fall with claim 1. Appellants argue claim 3 separately.

#### *Examiner’s Response*

Responding to Appellants’ contentions that Nutten fails to teach or suggest an infrared burner, the Examiner directs Appellants to Bennett and Patrick, utilized in the grounds of rejection as teaching an infrared burner since both references, as well as Appellants’ disclosure, disclose that combustion occurs against an incandescent surface. Ans. 9. The Examiner explains that Nutten is being used to show a burner in which liquid fuel is drawn into the combustion chamber and then into an air aspirated nozzle where an air stream creates the suction to draw in the liquid fuel. Ans. 10.

In response to Appellants’ contentions that neither Nutten nor Patrick teaches an infrared burner of the type taught by Appellants’ invention, the Examiner provides annotated copies of Appellants’ Figure 5A, Nutten’s Figure 1, and Patrick’s Figure 7. Ans. 10-13. The Examiner explains that Nutten discloses all features of the claimed invention except for a burner tube with a perforated outer surface rendering the burner an “infrared burner.” Ans. 11. Thus, the Examiner implies that what would make Nutten an “infrared burner” would be the tube 18 (hollow sleeve, Nutten’s

nomenclature) having perforations. The Examiner explains that by Patrick having a perforated burner tube, a person of ordinary skill in the burner art would understand that Patrick's perforated burner tube forms an "infrared burner." *Id.* The Examiner explains that Patrick's Figure 7 shows an infrared liquid fuel burner. *Id.* According to the Examiner, Nutten's deficiency of a perforated burner tube, which renders a burner tube an infrared burner, is remedied by Patrick's perforated burner tube within Figure 7 and has been annotated by the Examiner to identify the perforated burner tube. Ans. 12. Further addressing Appellants' concerns against the rejection, the Examiner explains that infrared burners are desirable to artisans because of their cleanliness and efficiency, as taught in Bennett, and their ability to minimize the possibility of flame quenching, as explained in Bennett. Ans. 13.

Responding to Appellants' arguments concerning Patrick using fuel under pressure which draws fuel into the nozzle, and such disclosure preventing Patrick from being utilized as a teaching to render obvious the claimed invention, the Examiner states that Appellants are individually attacking the references, e.g. Patrick, instead of the combined teachings of the references, Nutten, Patrick, and Bennett. Ans. 13. The Examiner further explains to Appellants that the teachings of Nutten, Patrick, and Bennett are not limited to specific structures taught within each reference; instead the issue is whether the concepts within Nutten, Patrick, and Bennett would suggest the modifications "called for by the claims," as well as what the references fairly suggest and what an artisan could reasonably infer from the references. Ans. 13-14. The Examiner explains that based on the teachings of Nutten and Patrick, a person of ordinary skill in the art would understand

that the result of a spray of fuel and air that enters into a combustion area for ignition and subsequent combustion occurs whether that spray of fuel and air is produced by either fuel under pressure that draws in air or by air under pressure that draws in fuel. Ans. 14. The Examiner further explains that while Bennett's teachings, within the background of the invention, indicate that infrared burners are generally of the pre-mix variety, this teaching does not preclude such burners from functioning when the fuel and air are mixed at the burner rather than before reaching the burner. Ans. 15. The Examiner explains that a person of skill in the art would recognize that combustion against the incandescent surface would occur irrespective of how the fuel and air feed the combustion, i.e., fuel and air fed pre-mixed or mixed at the burner. *Id.* Thus, the Examiner concludes that a person of ordinary skill in the art would modify Nutten's liquid fuel burner to include an incandescent combustion surface in the form of a perforated burner tube as taught by Patrick in order to obtain the recognized benefits taught within Bennett. Ans. 15-16.

## SUMMARY OF DECISION

We AFFIRM.

## DISCUSSION

The Examiner's Answer convincingly responds to Appellants' arguments against the grounds of rejection. As such, the Examiner's findings of the scope and content of the prior art are adopted. Also, the Examiner's acknowledgement of the differences between the claimed invention and the prior art is adopted. In light of the Examiner's findings



and responses to Appellants' arguments and rebuttal evidence, all of the evidence before us to review and consider leads to a legal conclusion that the claimed subject matter is obvious.

Moreover, based on the Examiner's findings and reasoned analysis leading to the Examiner's conclusion that the claimed invention is rendered obvious by the combined teachings of Nutten, Patrick, and Bennett, the claimed invention appears to be simply an arrangement of old elements with each element performing the same function as the element had been known to perform and yielding no more than what a person of ordinary skill in the art would expect. For claim 1, the Examiner found all of the claimed features within the combined teachings of Nutten, Patrick, and Bennett, noted the differences, and articulated a reason with a rational underpinning why a person of ordinary skill in the art would modify Nutten's burner tube based on the teachings of Patrick and Bennett. *See* Ans. 4, 6, and 7.

There is no evidence in the record that any claimed feature found by the Examiner in the prior art performs a different function than such a feature had been known to perform before. There is no evidence that any claimed feature yields no more than what a person of ordinary skill in the art would expect from such a feature. Absent evidence that what is found within the prior art by the Examiner to satisfy the claimed features function differently than known before and yield more than what a person of ordinary skill in the art would expect from such features, a claim to a combination of those features is rendered obvious by the teachings within the prior art. Appellants have provided only arguments that the claimed invention is not obvious in response to the Examiner's findings and analysis that lead to the Examiner's conclusion of obviousness. The Examiner has cogently

responded to those arguments. Moreover, Appellants' arguments do not take the place of evidence needed to be weighed in order to conclude that the subject matter set forth in the claims would have been nonobvious to a person of ordinary skill in the art. Accordingly, the Examiner's rejection of claim 1 is sustained and claims 2 and 4-8 fall with claim 1.

For claim 3, Appellants essentially rely on their arguments against the rejection of claims 1, 2, and 4-8. Inasmuch as we have found those arguments unpersuasive because there is no deficiency within the combined teachings of Nutten, Patrick, and Bennett to render obvious the invention recited within claim 1, we likewise find those arguments unpersuasive against the rejection of claim 3. Also, Appellants' argument that the addition of Reichhelm would not teach an operable infrared burner assembly as defined by the claims is conclusory since Appellants do not proffer any supporting evidence or technical reasoning why the addition of Reichhelm would not teach an operable infrared burner assembly.

#### DECISION

The Examiner's decision to reject the claims as obvious over the combination of prior art is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv) (2007).

AFFIRMED

Appeal 2009-003767  
Application 08/851,465

mls

JOHN RUSSELL UREN  
STE 202  
1590 BELLEVUE AVE  
WEST VANCOUVER V7V1A-7 CA  
CANADA